


2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 50A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SMA/SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band or Cathode Notch
- Weight: SMA 0.064 grams (Approximate)
SMB 0.093 grams (Approximate)

Top View

Bottom View

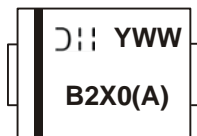
Ordering Information (Note 3)


Part Number	Qualification	Case	Packaging
B2xxA-13-F	Commercial	SMA	5000/Tape & Reel
B2xx-13-F	Commercial	SMB	3000/Tape & Reel
B250Q-13	Automotive	SMB	3000/Tape & Reel

* x = Device type, e.g. B260A-13-F (SMA package); B240-13-F (SMB package).

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
 2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



B2X0A = Product type marking code, ex: B220A (SMA package)
B2X0 = Product type marking code, ex: B230 (SMB package)
 = Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year (ex: 2 for 2002)
WW = Week code (01 to 53)

Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitance load, derate current by 20%.

Characteristic	Symbol	B220/A	B230/A	B240/A	B250/A	B260/A	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	20	30	40	50	60	V
Working Peak Reverse Voltage	V _{RWM}						
DC Blocking Voltage	V _R						
RMS Reverse Voltage	V _{R(RMS)}	14	21	28	35	42	V
Average Rectified Output Current @ T _L = 100°C	I _O	2.0					A
Non-Repetitive Peak Forward Surge Current, 8.3ms	I _{FSM}	50					A
Single Half Sine-Wave Superimposed on Rated Load							

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Lead	R _{θJL}	25	°C/W
		20	
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	-	-	0.50 0.70	V	I _F = 2.0A, T _A = 25°C
Leakage Current (Note 4)	I _R	-	-	0.5 20	mA	@ Rated V _R , T _A = 25°C @ Rated V _R , T _A = 100°C
Total Capacitance	C _T	-	-	200	pF	V _R = 4V, f = 1MHz

Notes: 4. Short duration pulse test used to minimize self-heating effect.

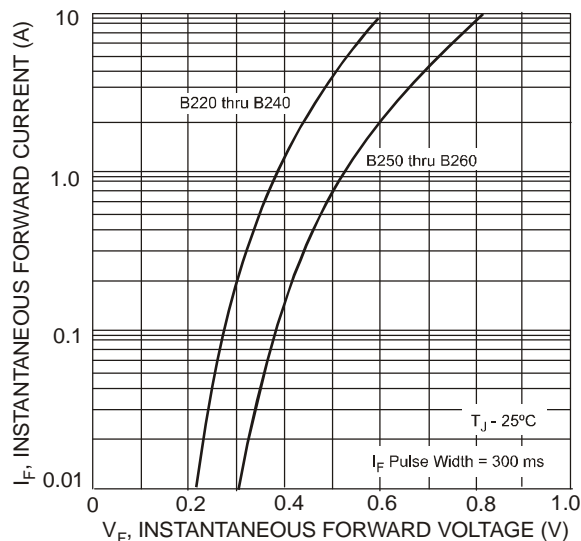


Fig. 1 Typical Forward Characteristics

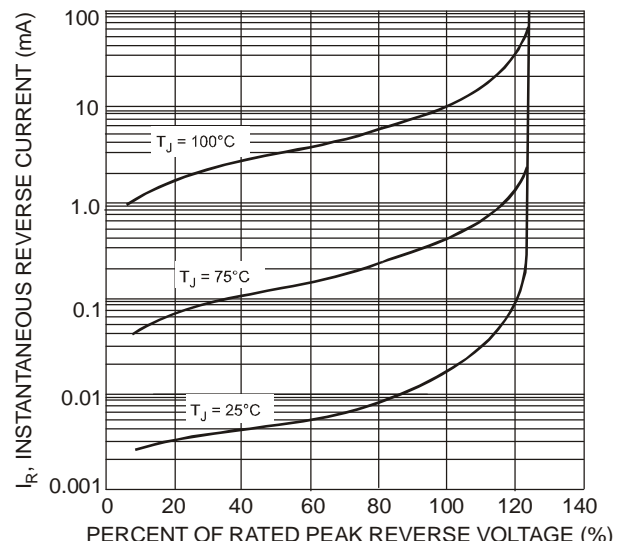


Fig. 2 Typical Reverse Characteristics

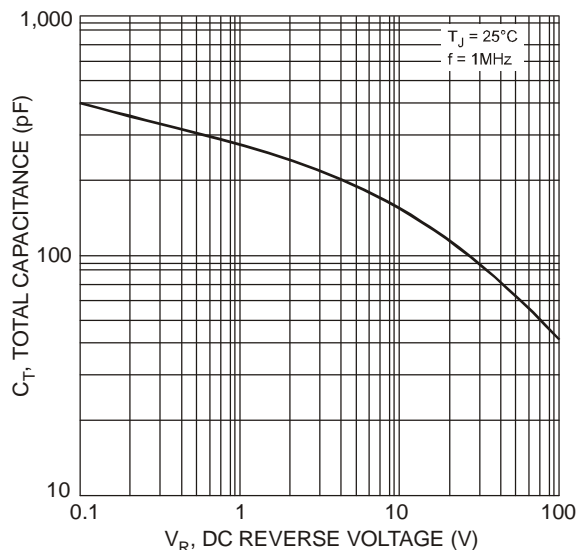


Fig. 3 Total Capacitance vs. Reverse Voltage

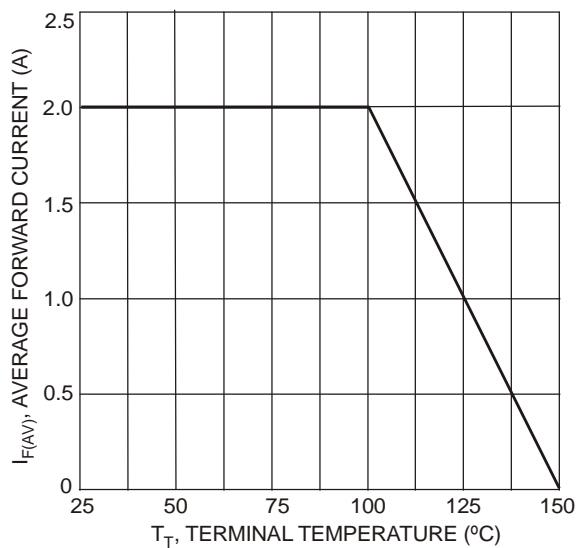


Fig. 4 Forward Current Derating Curve

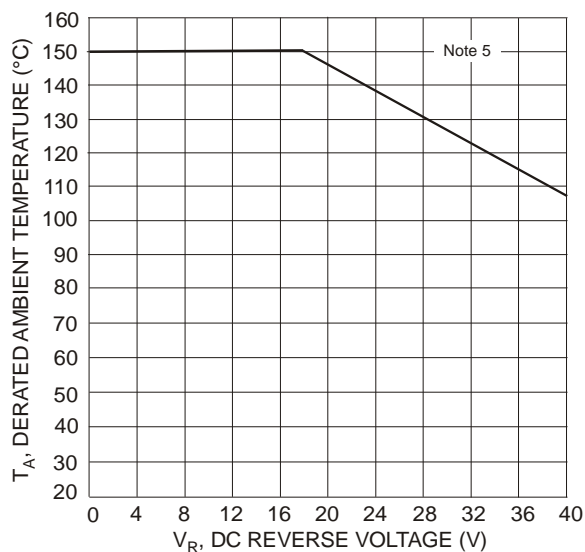


Fig. 5 Operating Temperature Derating (B240)

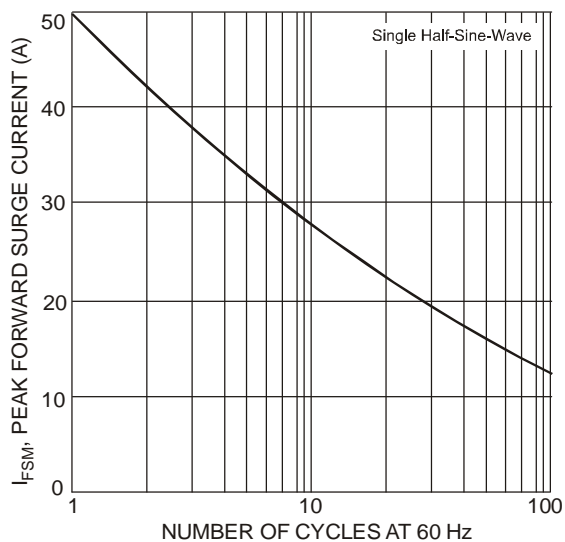
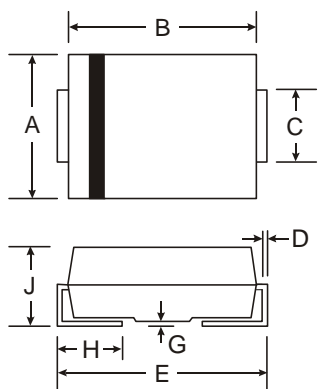


Fig. 6 Max Non-Repetitive Peak Forward Surge Current

5. Device mounted on FR-4 PC board with minimum recommended pad layout pattern as per <http://www.diodes.com/datasheets/ap02001.pdf>.

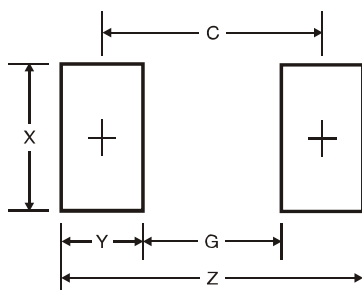
Package Outline Dimensions



SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	2.01	2.30
All Dimensions in mm		

SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout



SMA Dimensions	Value (in mm)
Z	6.5
G	1.5
X	1.7
Y	2.5
C	4.0

SMB Dimensions	Value (in mm)
Z	6.7
G	1.8
X	2.3
Y	2.5
C	4.3

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